

**CEROPTERA LONGICAUDA, A SECOND NORTH AMERICAN
SPECIES IN THE KLEPTOPARASITIC GENUS CEROPTERA
MACQUART (DIPTERA: SPHAEROCERIDAE)**

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Abstract.—*Ceroptera longicauda*, new species, is described from specimens collected in Levy and Leon Counties, Florida. It is compared to *C. sivinskii* Marshall, and new distributional data for the latter species is presented.

Key Words: Sphaeroceridae, Diptera, taxonomy, Kleptoparasite

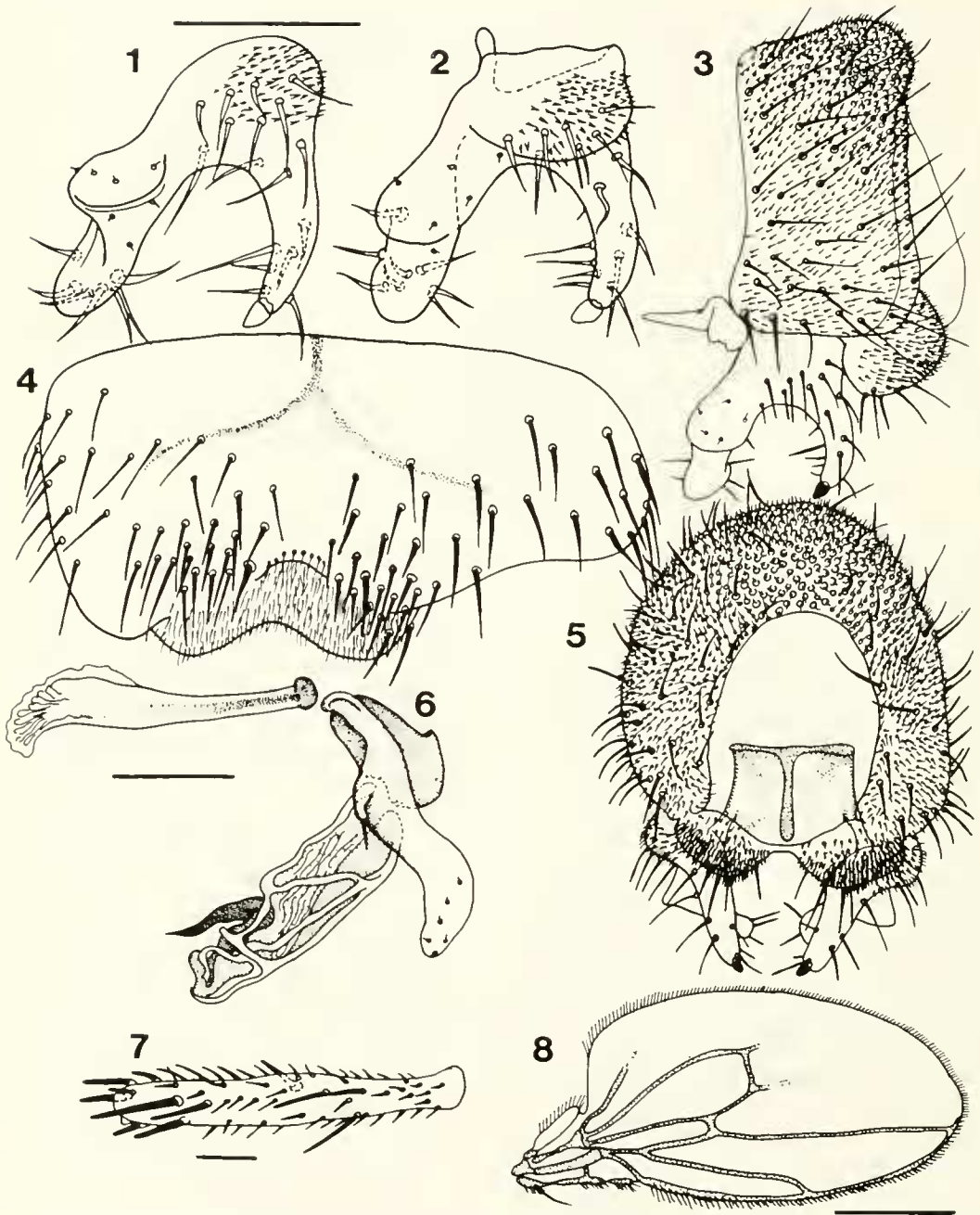
Ceroptera is widespread in the warmer parts of the Old World, with 16 African species, 8 Palaearctic species, and a single species described from Ceylon. This genus was first recorded from the Nearctic region with the description of *Ceroptera sivinskii* Marshall 1983. All species of *Ceroptera* for which biological information is available are associated with dung-rolling scarab beetles. Adult *Ceroptera* have been observed frequently clinging to dung beetles and were first observed to oviposit in scarab dung balls by Roubaud (1916). Sivinski (1983) demonstrated that *Ceroptera sivinskii* is phoretic and kleptoparasitizes dung caches of scarab beetles in north Florida. *Ceroptera sivinskii* has been observed in association with *Phanaeus vindex* MacLeay, *Geotrupes egeriei* Germar, *Copris minutus* (Drury), and *Canthon pilularius* (L.). It has also been reared from the dung cache of *Copris* sp. (Sivinski 1983). *Ceroptera longicauda*, new species, was observed to cling to the elytra of the scarab *Mycotrupes gagei* Olson and Hubbell. *Ceroptera longicauda* is similar to other *Ceroptera* in possessing strikingly small eyes, a long narrow interfrontal area, 2 long rows of orbital setulae, a small apical spur on the hind tibia, a retractile female abdomen with tubercle-based setae in the

membrane, and a deeply bilobed surstylus. Similarities shared between the two Nearctic species include the apparently synapomorphic, strongly modified male sternite 5 and several probably plesiomorphic character states such as the incompletely cleft surstylus and relatively well sclerotized abdomen. Furthermore, the legs of *C. longicauda* are not as strongly modified (for grasping the host) as those of the Old World species. *Ceroptera longicauda* can be differentiated from *C. sivinskii* by the following key:

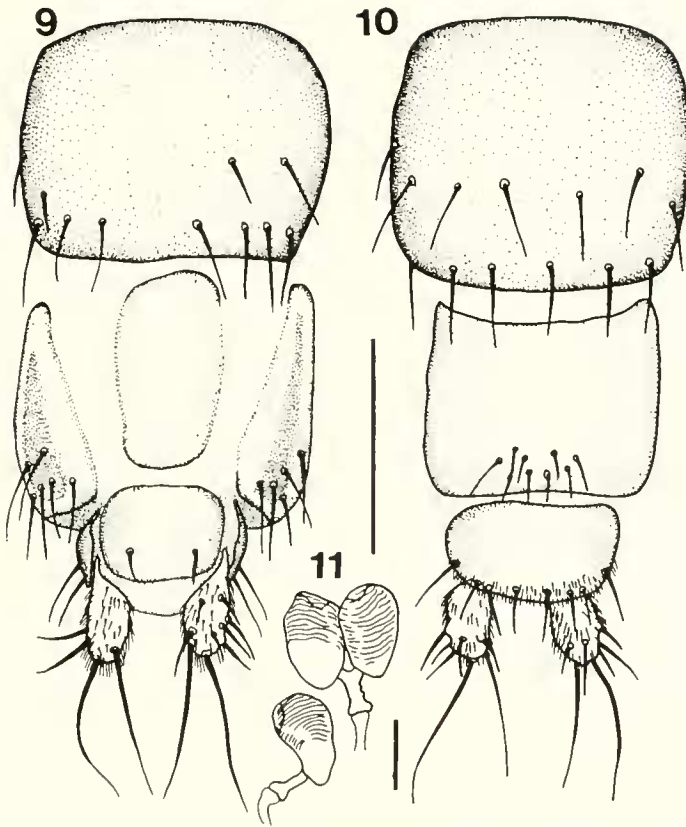
1. Lunule broadly rounded anteriorly. Wing membrane brown tinted. Two pairs of dorsocentral bristles. Epandrium posterodorsally elongated and tapered, covered with microtubercles (Fig. 3). Anterior surstylar lobe with a large outer lobe (Figs. 1, 2). Female cerci less than twice as long as wide (Fig. 9) *C. longicauda*
- Lunule angulate anteriorly. Wing membrane clear. One pair of dorsocentral bristles. Epandrium simple. Anterior surstylar lobe with a straight outer surface. Female cerci more than twice as long as wide *C. sivinskii*

***Ceroptera longicauda* Marshall**
Figs. 1-11

Description.—Body length 2.1-2.7 mm. Color dark brown; tarsi, apices of tibiae, gena, frons and face paler. Interfrontal area



Figs. 1-8. *Ceroptera longicauda*, male. 1, Left surstylus, posteroventral. 2, Left surstylus, lateral. 3, Terminalia, left lateral. 4, Sternite 5. 5, Terminalia, posterior. 6, Aedeagus, aedeagal apodeme and paramere, left lateral. 7, Left tibia, dorsal. 8, Left wing. Scales for Figs. 1-2 as on Fig. 2; for Figs. 3-6 as on Fig. 6. Scale bar for Fig. 8 = 0.5 mm; other scale bars = 0.1 mm.



Figs. 9-11. *Ceroptera longicauda*, female. 9, Terminalia, dorsal. 10, Terminalia, ventral. 11, Spermathecae. Scale bars = 0.1 mm.

long and narrow, $0.2\times$ as wide as frons, $0.4\times$ as wide as high; bordered by 5-6 equal interfrontal bristles. Orbital setulae forming 2 rows; only outer, exclinate row well developed and extending below eye. Face broadly carinate, lunule triangular with a broadly rounded apex. Flagellomere 1 small, 1.5 times as broad as long; arista arising dorsobasally, $2.1\times$ length of rest of antennae. Eye small, $0.8\times$ genal height. Thorax with 2 pairs of dorsocentral bristles, anterior pair slightly longer than acrostichal setulae, posterior pair subequal in length to broad scutellum. Acrostichal setulae in 7-8 rows between dorsocentral areas; prescutellar pair not enlarged. Katepisternum with a large posterodorsal bristle reaching $0.8\times$ dis-

tance to wing base, 1 or 2 small anterodorsal setulae, and several ventral setulae. Legs long, all tarsi elongate and curved, distinctly longer than tibiae, with enlarged pulvilli and claws. Mid tibia with 2 anterodorsal and 1 posterodorsal bristle on proximal half; 1 anterodorsal, 1 dorsal and 1 posterodorsal bristle just below middle; 1 very long dorsal bristle in apical quarter; apical part of mid tibia with large anterior and smaller posterior preapical bristles and with a long apicoventral bristle; ventral surface of mid tibia with 1 long bristle near middle. Hind tibia with a weak apicoventral spur and 2 weak distal dorsal bristles, each shorter than tibial width. Hind tarsomeres with short, stout apicoventral bristles. Wing membrane dis-

tinctly brown tinted, second costal sector $1.1\times$ as long as third in male, $1.2\times$ in female (Fig. 8).

Male terminalia: Sternite 5 elongate, posteromedial margin bilobed, setulose, projecting over genital pouch (Fig. 4). Epandrium narrowed and elongated posterodorsally; posterodorsal surface covered with microtubercles (Figs. 3, 5). Cerci bulbous, distinctly differentiated from epandrium. Hypandrium small short, simple (Fig. 3). Surstyli deeply cleft; anterior lobe with a large lateral process; posterior lobe more slender, with a stout apical spine (Figs. 1, 2). Distiphallus elongate, well sclerotized, with a prominent distal ventral medial sclerite. Basiphallus short, simple; ejaculatory apodeme apparently absent. Paramere almost parallel sided, weakly bent anteriorly near apex (Fig. 6).

Female terminalia: Abdomen strongly telescoping; membrane with short, scattered, tubercle-based setae. Tergite 8 with tripartite pigmentation, median part bare (Fig. 9). Epiproct pale medially and posteriorly, with 2 small setae. Hypoproct broad, setulose posteriorly (Fig. 10). Cerci short, less than twice as long as wide, with long apical bristles. Spermathecae ovate, bent, swollen apically, with a small invagination at apex; ducts short, inserted eccentrically (Fig. 11).

Types.—Holotype δ , Florida, Levy Co., west of Archer, 15.iii.1987, ex. *Mycotrupes gagei*, Paul Skelley (BRI). Paratypes: Florida, 26 δ , 43 \varnothing , same data as holotype; 2 δ , 5 \varnothing same data except i.iii.1987, (GUE, FSC, BRI); Levy Co., 17.iii.1976, pitfall trap, L. R. Davis (3 \varnothing , FSC); Leon Co., Tall Timbers Research Station, 8–15.x.1969, pitfall, D. L. Harris (2 δ , 2 \varnothing , FSC).

Ceroptera sivinskii Marshall

Ceroptera sivinskii Marshall 1983: 139.

Material made available since 1983 has extended the known distribution and allowed two amendments to the original description. The size range is modified to 1.4–

2.5 mm, with the majority of specimens less than 2.0 mm (outside the range of the larger *C. longicauda*). The dorsal part of the epiproct, transparent and apparently membranous on the type material, is lightly sclerotized and weakly pigmented at least posteriorly on most other specimens, as in *C. longicauda*.

New records (75 specimens): Florida, Liberty Co., 10 mi. SW. Juniper, Rt. 12, 26.iii.1983, pig dung among Turkey Oaks, Woodruff and Thomas (FSC); Marion Co., Ocala National Forest, Rd. 65, 1.5 mi. W. State Rd. 19, 15–16.iii.1984, dung trap, R. Woodruff (FSC); Alachua Co., Gainesville, Hogtown Creek, 12.x.1976, P. M. Choat & R. E. Woodruff (FSC); Okaloosa Co., 1 mi. N. Holt, Blackwater River Nat. For., 23.x.1978, L. Stange, human dung trap among Turkey Oaks (FSC). Alabama, Covington Co., 1.7 mi. E. jct. Rt. 84 & Rt. 55, pig dung trap, 4–10.iii.1977, Woodruff and Wiley (FSC). Massachusetts, Nonamesset Id., vi.24.23, sheep dung (1 δ , A. H. Sturtevant Collection, USNM).

ACKNOWLEDGMENTS

We thank NSERC for financial support and T. Wheeler for helpful comments. P. Skelley and R. E. Woodruff of the Florida State Collection of Arthropods, Gainesville (FSC) made much of this material available to us. Specimens not deposited at FSC are at the University of Guelph (GUE), the Biosystematics Research Centre in Ottawa, Ontario (BRI) or the United States National Museum, Washington (USNM).

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